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ABSTRACT

One hundred ninety-four trainable retarded 6- to 34-year-old students participated in a field test of the Money Unit, one of five instructional units in the Money, Measurement and Time Program. Pre- and posttests of the Money Skills Test and the Money Expressive Test were administered to Ss, and 11 teachers completed evaluations of the unit. Ss' performance gains on both tests were found to be significant, and teachers' evaluations further supported the useability and effectiveness of the Money Unit. Revision recommendations suggested by the teachers centered on the areas of the material's general format and suitability for trainable retarded students. (CL)

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Janet T. Nelson, Joni B. Troup, Martha L. Thurlow
Patricia H. Krus, James E. Turnure
University of Minnesota

Research, Development and Demonstration
Center in Education of Handicapped Children
Minneapolis, Minnesota

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RESEARCH, DEVELOPMENT AND DEMONSTRATION CENTER
IN EDUCATION OF HANDICAPPED CHILDREN

Department of Psychoeducational Studies
Pattee Hall, University of Minnesota, Minneapolis, Minnesota 55455

The University of Minnesota Research, Development and Demonstration Center in Education of Handicapped Children has been established to concentrate on intervention strategies and materials which develop and improve language and communication skills in young handicapped children.

The long term objective of the Center is to improve the language and communication abilities of handicapped children by means of identification of linguistically and potentially linguistically handicapped children, development and evaluation of intervention strategies with young handicapped children and dissemination of findings and products of benefit to young handicapped children.

An Assessment of the Effectiveness of the Money, Measurement and Time Program for TMR Students

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University of Minnesota

The Money, Measurement and Time Program is an instructional program designed to provide young educationally handicapped learners with a basic understanding of money, measurement, and time. It is a program which was developed through the joint efforts of the University of Minnesota's Research, Development and Demonstration Center and the Special Education Department of the St. Paul Public Schools. The Program, developed over a period of three years, was designed for children designated as educable mentally retarded (EMR). Although developed for EMR students, several teachers of trainable mentally retarded (TMR) students indicated that they thought the materials might also be appropriate for the TMR population. If this proved to be true, the Money, Measurement and Time Program could fill an important void in the academic curriculum available to TMR individuals. This paper is a description of the field-test of the Money, Measurement and Time Program with TMR students.

Traditionally, curriculums for TMR students have emphasized the development of self-care skills and social behaviors. However, as state legislatures continue to enact mandatory public school education for TMR students, it is doubtful that instructional objectives relating only to self-care skills, personal safety,

and social behavior will be adequate. As Brown and Sontag (1972) state, "If a TMR level student is to be placed in public programs for 15 years, it is extremely doubtful that such programs will be justified if at the end of such a time period all that can be expected is for him to be maintained at home or placed in a traditional residential institution" (p. 14). The primary long-term objective of instructional programs for TMR students should be to enable them to function in a community setting. The need to teach TMR students practical skills, such as those related to money, is evident. Appropriate academic materials should be found or developed to meet this need.

The effectiveness of presenting academic subject matter to TMR students was recently shown in a study conducted by Brown and Bellamy (1972). Four adolescents with a mean IQ of 38 were enrolled in a public school program for TMR students and taught a sequence of arithmetic skills which culminated in a consistent solution of simple addition problems. A follow-up study conducted one year later by Bellamy, Greiner and Buttars (1974) found that students had retained the skills and were able to learn a new sequence of skills based on those retained. From these results, the authors concluded that TMR students can succeed in cummulative instruction which progresses from school year to school year.

Huppler and Sontag (1972) conducted a study with five TMR

students to determine if academic skills taught in the classroom would transfer to related practical skills which in turn would increase independent community functioning of the students. The five students were taught various counting skills and then learned to use these skills in counting out change from $1.00, given a set of coins. The authors felt that the results of this program suggested that the application of an academic skill to a practical situation is in itself a skill which can be taught. However, the researchers described an obvious limitation to their study. A student ultimately must be able to count out the correct amount of money from whatever change he has at the moment, not from a specified set of coins. Complete success in teaching TMR students to practically apply a skill is not attained if the appropriate response must be taught for the many situations the student might encounter.

It seemed likely that the Money, Measurement and Time program, which had proven to be effective for EMR children (Thurlow, Turnure, Taylor, Krus, Howe, & Troup, 1975), could also be very effective for TMR individuals. To test the appropriateness of the Program for TMR students, the Money Unit was placed in TMR classrooms and thoroughly evaluated. The nature and results of the evaluation will be presented here. In addition, suggestions for revisions which might make the materials more appropriate for TMR students will be proposed.

Evaluation of New Materials

Two factors are important in judging the effectiveness and useability of a program of instruction. They are (a) the results from pretesting and posttesting on specific behavioral objectives, and (b) the teachers' reactions to the materials.

The effectiveness of the Money Unit for TMR students was primarily determined by assessing the change in performance from pretest to posttest. The effectiveness data not only assessed the success of various aspects of the instruction, but also helped in the identification of areas that needed to be revised.

Teacher evaluations served as the second source for judging the effectiveness and useability of the Money Unit. The importance of including the teachers in the process of evaluation has been noted by McLaughlin (1973). Not only is the teacher the main "consumer" of the materials being evaluated, but the teacher has access to certain forms of data neither obtainable by testing nor visible to the classroom observer.

Teachers were shown to be effective in evaluating materials in a study by Meyen, Frank and Rodel (1971). Nineteen special education teachers were asked to evaluate materials based on their

use in the classroom. Three evaluative procedures were used: (a) a general evaluation report, (b) a lesson plan evaluation, and (c) written comments on the teaching sequence. An analysis of the general evaluation and the lesson plan evaluation revealed that the teachers agreed on the strengths and weaknesses of the various aspects of the materials. The high level of agreement indicated the reliability of using teachers as evaluators of materials.

Junkala (1970) emphasized the necessity of teacher involvement in material evaluation. He felt that teachers who are not involved in evaluation may tend to use materials in a rote fashion. Similarly, Johansen (1967) stressed teacher participation because it increases the likelihood of the implementation of those materials. He noted that when teachers are not involved in the evaluation and collection of information, they are less willing to use the information provided from the evaluation.

Finally, teachers view themselves as being better evaluators of instructional materials for their classroom than school principals, psychologists, or publishers. In an effort to study teacher attitudes toward curriculum evaluation, Baum (1972) sent an 11-item instructional material evaluation scale to 100 randomly selected teachers of the mentally retarded. He proposed to determine teacher attitudes on: (a) their ability to evaluate instructional materials, (b) their willingness to cooperate in the evaluation process, and (c) the ability of selected other

people (e.g., principals, psychologists, and publishers) to evaluate instructional materials. The results of the survey indicated that teachers of the mentally retarded had very positive attitudes concerning their abilities to evaluate instructional materials. Their attitudes were also positive toward evaluations completed by their colleagues. Further, the teachers favored teacher evaluations of materials over those of principals, psychologists, and publishers.

Because of the belief that teachers are an important source for evaluation information, especially in a field-test where there was to be minimal interaction between field-test participants and project personnel, detailed teacher evaluation forms were developed. The results from these forms were given special attention in the TMR field-test of the Money Unit.

The Money, Measurement and Time Program

The Money, Measurement and Time Program (Thurlow, Taylor, & Turnure, 1973) consists of five instructional units: (a) Money, (b) Measurement of Length, (c) Measurement of Weight, (d) Time with the Clock, and (e) Time with the Calendar. Placement of the Money Unit in classes of TMR students was undertaken to test the effectiveness and suitability of the materials for the TMR population. Further information concerning the specific instructional units in the Program is available in the Teacher's Introduction to the Program (Thurlow, Taylor, & Turnure, 1973).

In contrast to Huppler and Sontag's (1972) approach to teaching money to TMR students (i.e., academic skills taught and then applied to many concepts), the approach of the Money, Measurement and Time Program is to attack meaning and understanding of concepts through vocabulary instruction and to introduce skills only as the students acquire the necessary vocabulary foundations. Also, the approach attempts to increase general language development, especially expressive communication, and to develop the student's use of efficient learning and memory strategies in any area of instruction. The Program does not require that students have reading or computational skills, and each unit has only minimal prerequisite skills. For example, in the Money Unit, the student entering the first book of the instruction is required only to distinguish between "big" and "little."

All units in the Money, Measurement and Time Program stress the "growth of meaning." As described in the Teacher's Introduction, the "growth of meaning" is developed through repeated references to the same vocabulary word, with each succeeding reference expanding upon the meaning of the word by relating it to other concepts. Thurlow, Taylor, and Turnure (1973) state that the "growth of meaning" follows a continuum from simple recognition through several stages of vocabulary development and finally to skill development. Practice is emphasized to make certain the student achieves mastery at a given level of meaning before moving to the next level. The vocabulary provides the starting point of the program and

aids in the development of skills the students need in order to demonstrate a thorough understanding of the subject area. Each vocabulary word presented is expanded to encompass more and more meaning, so that the desired skills can be introduced.

The "growth of meaning" was given credibility as a useful approach to vocabulary development by Stayton and Ohwaki (1974) who conducted a study of 20 moderately and severely retarded adolescents. The subjects were required to memorize a 20-word list composed of four categories with five words in each category. Two categories contained words related to either a familiar action or spatial context. The other categories contained words unrelated and abstract in nature. The results showed that the average recall of the contextually related words was significantly greater than the recall of the words in the remaining categories. These findings indicated that when words are embedded in a realistic and familiar context, they are more easily organized and remembered by retardates than words presented in abstract terms.

Three basic instructional techniques underlie the Money, Measurement and Time Program. They are definitions and elaborations, which are used primarily in vocabulary development, and relations, which are essential to skill development. These techniques were found to be effective methods for vocabulary instruction by teachers of moderately retarded children in a study conducted by the Research, Development and Demonstration Center

at the University of Minnesota (cf. Taylor, Thurlow, & Turnure, 1974). As indicated in the Teacher's Introduction to the Money, Measurement and Time Program, each time a word is presented its meaning must be carefully developed. This cannot be done through definitions alone, but rather through the use of explicit definitions and expanded contexts, both of which must be presented at the student's level of development.

In order for vocabulary learning and skill development to be organized and efficient, instruction must be relational. In the Money, Measurement and Time Program three methods are employed to make relations between words and skills meaningful and operational for the learner. An introductory relation is a preparatory statement which provides an organizational framework for the instruction to take place. A transition is a brief statement of the relation between a word or skill just taught and the next word or activity to be introduced. A summary relation offers a review of the meanings of words presented and a summary of the relationships between words.

Money Unit

The Money Unit is the largest of the five instructional units in the Money, Measurement and Time Program. The Unit was first produced in a pilot-test form and underwent extensive formative evaluation and revision (Thurlow, Krus, Howe, Taylor, & Turnure, 1974). It is the revised form which is described here.

The Money Unit consists of four books of instruction which begin by developing a general awareness of the function and uses of money. The books then proceed to teach the recognition of the different kinds of U.S. money, their relative values, and their exact values. Because the Program is designed to provide instruction that could be applicable to everyday situations, training in counting money and making change is included in the instruction, as well as practical applications in store situations. Students may begin instruction at various entry points depending on their beginning skills. Individually administered assessment instruments are provided for initial placement and for determining final achievement.

The instructional content of the four books of the Money Unit was written to stress the gradual and closely structured development of both money skills and money vocabulary. The four books in the Money Unit generally represent progressive levels of instruction, from the lowest to the most advanced. Certain behavioral objectives must be mastered before students may progress from one book of instruction to the next book. Thus, depending upon the ability of the students, each book of instruction can take from two weeks to several months to complete. Each book in the Money Unit is composed of lessons which contain instruction related to one or more vocabulary words. Each lesson is associated with specific purposes and behavioral objectives, with the objectives in one lesson generally being requisite for adequate performance

in later lessons. A lesson, which often requires several periods of instruction, includes three major components: (a) pre-activities which introduce the concepts or review the meaning of necessary prerequisite concepts, (b) tape presentations which develop the meaning of vocabulary words and the relations between words, and (c) post-activities which review and reinforce the concepts and relations established in the tape presentation.

Further explanation of the Money Unit is available in the Introduction to the Money Unit, which accompanies the instructional materials.

Method

Subjects

Twenty-three classes of TMR students in Minnesota, Wisconsin, and Illinois were selected to participate in the TMR field-test of the Money Unit. Of the twenty-three classes, 11 classes were from Minnesota, 10 were from Wisconsin, and 2 were from Illinois. It should be noted that the data presented in this paper reflect the information received from 20 classes. No pretest or posttest data was received from three classes selected for the field-test, and thus they have been dropped from all subsequent references to the field-test participants.

Overall there were 194 students in the field-test of whom 76 were from Minnesota, 91 from Wisconsin, and 27 from Illinois. Table 1 presents a summary of the IQ, MA, and CA data of the TMR students. The variations in the number of students under each variable is due

Table 1

Mean IQ, MA, and CA Data for the TMR Population

	IQ	MA (in mos.)	CA (in mos.)
$\bar{X}$	42.39	64.65	174.00
SD	11.45	18.86	54.77
Range	20-78	33-137	73-409
N	181	124	194

to the fact that incomplete information was received for some students.

Tests

Two criterion-referenced tests, a Skills Test and an Expressive Test, were administered to the students to assess the effectiveness of the Money Unit instruction. Each test was administered as a pretest, with the results used to determine the placement of the class within the sequence of instruction. The same tests were administered as the posttest at the end of the school year.

The Money Skills Test was a twenty item test designed to determine the student's functional understanding of money and money skills. It consisted of five subtests which evaluated skills ranging from simple recognition to counting money. The test was administered to all students (except, of course, those who were absent, uncooperative, etc.).

The Money Expressive Test was a twenty item test designed primarily to evaluate the student's ability to utilize specific vocabulary words. It consisted of four subtests which corresponded to the four instructional books of the Money Unit. This test was administered to one-half of the students. Administration was done on a random basis.

Further information and copies of the Money Skills and Money Expressive Tests can be found in the report on the formative evaluation of the Money Unit (Thurlow, Krus, Howe, Taylor, & Turnure, 1974).

Procedure

Participation of TMR classrooms in the field-test of the Money Unit took place over a period of six months. The goal of the field-test was to assess the Unit under relatively normal classroom conditions, with minimal interaction between project personnel and field-test participants.

Before instruction was started, a brief in-service training session was conducted. The purpose of this session was to introduce the Money, Measurement and Time Program, the field-test plan, and especially, the Money Unit to the teachers in the TMR field-test. Then, the students in each class were pretested on the Money Unit Tests (Skills and Expressive). Testing was done by teachers and/or teacher aides, and the results were sent to project personnel at the University of Minnesota.

Posttesting was conducted at the end of the school year, again by the teachers and/or teacher aides. At this time, teachers were also asked to fill out an evaluation form on the Money Unit (see Appendix 1).

Results

It was expected that all students would be pretested and posttested on the Money Unit tests. However, for both the Skills and the Expressive Tests, varying numbers of students were tested. Teachers returning test data sometimes reported lack of cooperation from students, inability to take tests, and

absenteeism as reasons for the variations in the number tested. Pretest data were received from 20 classes, but posttest data were received from only 11 classes. Apparently, end of the year conflicts and some misunderstandings about testing were responsible for the failure of 9 classes to return posttest data.

Table 2 presents the overall pretest and posttest scores on the Money Tests. It is evident by the higher mean pretest and posttest scores on the Expressive Test that the TMR population participating in this field-test was better able to deal with the expressive items than to respond to the more academically-oriented skill items in the Money Skills Test. However, the change in mean scores from pretest to posttest showed a definite gain in performance on both the Money Skills and Money Expressive tests. Unfortunately, these data cannot be analyzed accurately because some students who were pretested were not posttested. The best data to analyze for gains due to the instruction would include the scores of only those students who were both pretested and posttested.

Table 3 presents the data of those students who received both the pretest and posttest. This table shows a significant decrease in the number of students assessed, and thus the means and standard deviations are different from those presented in Table 2. The scores in this table again suggest that the TMR students were indeed performing at a higher level on the Expressive Test. The gains in performance from pretest to posttest were analyzed by means of related t tests and were found to be highly

Table 2

Pretest and Posttest Scores on the Money Skills and Expressive Tests

Money Skills

	Pre	Post
$\bar{X}$	2.66	6.45
SD	2.85	4.54
N	192	115

Money Expressive

	Pre	Post
$\bar{X}$	5.74	10.30
SD	4.06	5.07
N	103	79

Table 3

Pretest to Posttest Comparison of Subjects Receiving both Pre and Post Money Skills and Expressive Tests

Money Skills

	Pre	Post
$\bar{X}$	3.03	6.40
SD	2.91	4.51
N	115	115

Money Expressive

	Pre	Post
$\bar{X}$	6.15	10.09
SD	4.14	4.35
N	61	61

significant on both tests (Money Skills: t (114) = 10.36, $p < .001$; Money Expressive: t (60) = 10.36, $p < .001$). The pretest to posttest achievement levels for the Money Skills and Expressive Tests are presented graphically in Figure 1. The slopes of the lines reflect the gains made by the students. The figure also exemplifies the students' higher performances on the Expressive Test.

Table 4 presents the pretest and posttest percent correct figures for each item in the Money Tests. In this table the items have been integrated and organized according to their sequencing within each book of instruction. Marked increases in the performances on most items are evident. On all items, except the two indicated in the table, there was a significant increase from pretest to posttest. Although the items dealing with relative value ("select dime as coin that buys most," "orders 5 coins by value," and "selects coins buying more than a nickel") had quite low pretest scores, the increases in performance from pretest to posttest were significant. Another item ("selects pictures of money") showed a low pretest score and a very small, yet significant gain. It should be noted that the low performance on this item seems to reflect a problem with the test item rather than with the students or the instruction. This possibility was suggested by the results of the EMR field-test of the Money Unit (Krus, Thurlow, Turnure, & Taylor, 1974).

As one moves down the list of items, there is a noticeable

Figure 1

Mean Achievement Levels on the Money Skills and Expressive Pretests and Posttests

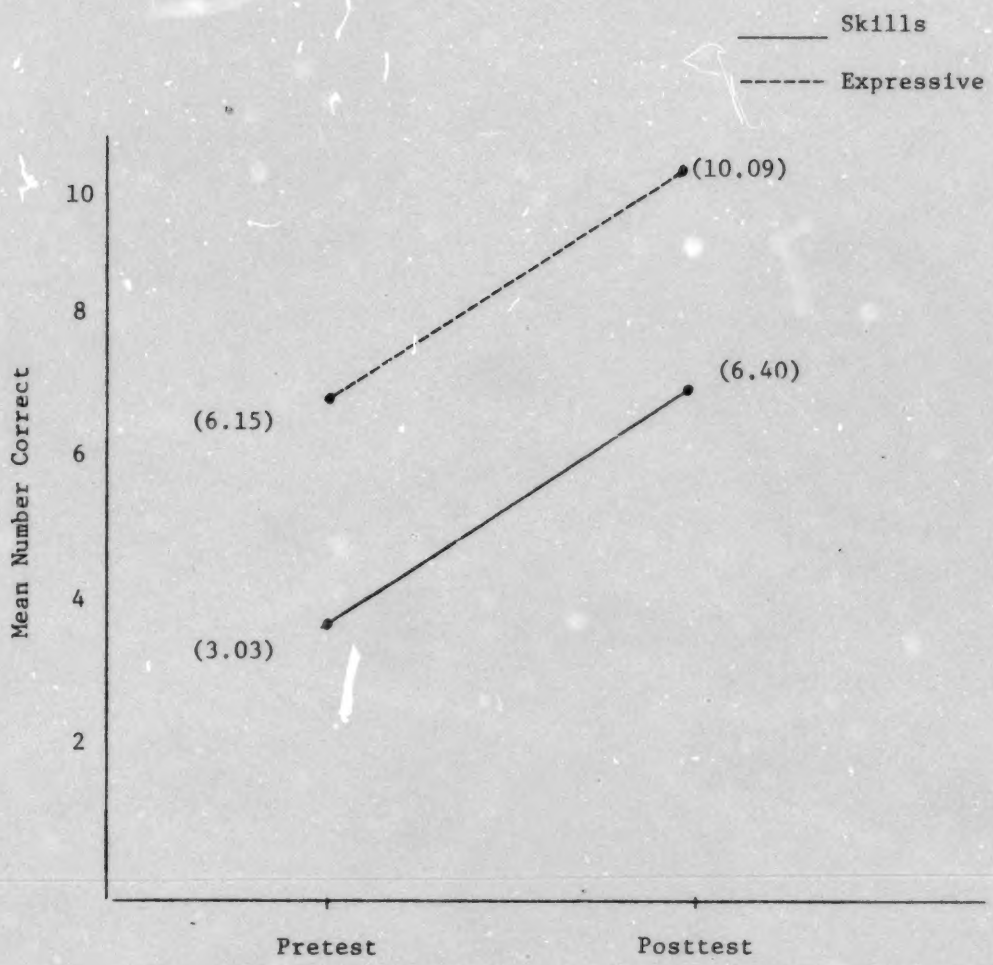

Table 4

Percent Responding Correctly on Individual Items

Book One	Pretest	Posttest
Describes trading situation	35.0	78.5
States "money" when related to store	57.3	85.1
Selects pictures of money	15.6	46.9
States "save" in response to definition	22.3	55.7
Book Two		
Labels nickel	45.8	73.0
States "penny" in response of definition	53.4	85.1
States "dime" in response to definition	35.0	57.6
Selects dime as coin that buys most	18.2	45.2
Selects pictures of half dollar	47.8	78.2
Names more than three coins	48.5	82.3
Orders five coins by value	9.8	33.0
Selects coins buying more than a nickel	7.3	29.5
Describes why fake bill not real	40.8	64.6
States "bill" labeling 20 dollars	30.1	63.3
Selects picture of five dollar bill	37.8	73.0
States "fifty dollar bill"	17.7	42.6
***Book Three**		
Describes relative value of quarter	23.3	46.6
States penny is "one cent"	25.4	57.4
Reads 5¢	40.8	68.4
Changes nickel for five pennies	7.8	27.0
****Responds "change" to definition	5.8	5.0
States "dime" is 10 pennies	6.7	22.6
States "quarter" is "25 cents"	10.4	29.5
States "50 pennies in half dollar"	4.1	15.6
States "50 cent piece"	10.7	26.6
States dollar is "100 cents"	4.7	25.2
Reads $2	16.5	33.1
Reads $2.30	6.8	17.7
States 10 dollar bill = 2 fives	1.6	12.2
Counts five nickels	3.1	12.2
Counts combinations of coins (20¢)	3.1	20.0
Counts bills and coins ($2.32)	.5	1.7
Counts $1 bill and coins ($2.35)	.5	1.7
Book Four		
Labels shopper as "customer"	5.8	30.4
Labels cash register	26.2	62.0
Labels price tag	13.6	26.6
States that cash is money	37.9	62.0
Labels "check"	30.1	51.3
States "change" to definition	13.6	32.4
*****Makes change 12¢ from quarter	.5	0

*All but four of the eleven classes received instruction beyond Book Two; only one class received instruction beyond Book Three.

**The decrease from pretest to posttest was not significant.

***The decrease from pretest to posttest was significant ($p < .001$).

decrease in the pretest scores due to the increased difficulty of the items. Although posttest scores were not high on the more difficult items, the gains in performance were generally significant.

Teacher Evaluation of the Money Unit

At the end of the school year, a teacher evaluation form was distributed to all teachers participating in the TMR field-test of the Money Unit. The teachers were asked to send the forms back to project personnel and were also told they could delete their names if they chose to remain anonymous. This detailed questionnaire was designed to help the teachers evaluate the effectiveness and useability of the materials. The teachers' reactions to the Program, in general, were also obtained on the evaluation form. (See Appendix 2 for a detailed summary of the results from the teacher evaluation forms.)

Of the 20 Money Unit evaluation forms which had been sent out 11 were answered and returned. The teachers responding had from one to fourteen years of teaching experience, with the mean being 4.2 years (SD = 3.7). Also, the teachers had one to seven years of teaching experience with educationally handicapped students ($\bar{X}$ = 3.0 years, SD = 2.0). Nine out of the 11 teachers were certified in special education.

On the evaluation forms, the teachers indicated that the mean preparation time for each teaching period was 17.8 minutes. The average length of each teaching period was about 25 minutes, and the Unit was generally taught every day of the week. The

room arrangement preferred by most teachers was one where the teacher, tape recorder, and book were in the center, with the students on the floor or in desks around them.

Most of the teachers enjoyed using the Money Unit and indicated they would use it rather than another instructional package when they teach money again. However, about half of the teachers indicated they would also use supplementary materials. Eighteen percent said the repetitiveness of the Unit was necessary and 82% felt the materials offered more diversity than most. None of the teachers indicated that they found the materials boring. In general, over half of the teachers thought the Money Unit was more useable, effective, and enjoyable than other commercial materials they had used. Seventy percent of the teachers felt that most of the concepts covered in the Money Unit were important to the students in the long run, and the rest of the teachers reported that all concepts were necessary. Over two-thirds of the teachers felt the students would remember the more important money concepts a year from the time they had learned them.

In addition to responding to specific questions, the teachers were encouraged to comment on other aspects of the materials. The remaining portion of the Results section deals with comments made by the teachers concerning the format of the materials and their suitability for TMR students.

Many suggestions were made with respect to the student texts. Two forms of student texts were used: a "Big Picture

Book" and individual "Children's Books." The Big Picture Book (11" x 17") required the teachers to manipulate the pictures for the whole classroom. This book was placed on a type of easel and situated so that all students could see it easily. Such books were used for the beginning instruction in the Unit. The Children's Books were individual books given to each student. These books were small (8 1/2" x 11") and were designed so the students would be responsible for turning the pages, pointing to pictures, and generally following along on their own. The Children's Books were used for the more advanced levels of instruction in the Unit.

The first and foremost suggestion made about the student texts was to have a sturdier Big Picture Book. Teachers noted that the Big Picture Book was very difficult to handle in its present form. It was also suggested that the individual books be made with hard covers. Another recommendation concerning the individual student texts was that the pages be tabbed for easier accessibility to each lesson. When asked how the student texts should be supplied to the classroom, 55% of the teachers said that both forms should be supplied so that the teachers could select which form would be used during a given tape presentation.

On the evaluation forms, teachers also noted the need for improved test pictures. The major suggestions made were to (a) use real coins instead of pictures of coins, (b) use colored pictures, and (c) improve the clarity of some pictures. It was

felt that with improved test pictures students might be able to perform at a higher level. Also, one teacher felt that the students would have scored better if the teacher had been able to individualize prompts and questions.

The teacher evaluation form also included an item asking whether or not teacher administered assessment devices needed to be included in the instruction (e.g., lesson tests, book tests). Forty percent of the teachers indicated they would like to see such tests added to the unit to assist in teacher evaluation.

With respect to the suitability of the Money Unit for TMR students, 54% of the teachers thought the Unit was complete as it is, 27% requested more instruction at the beginning and 18% requested more instruction at the end. Also suggested was the inclusion of more activities for the students. One teacher noted she was repeating the same activities over and over again in order to insure mastery of certain concepts by the students.

One suggestion made by some teachers was that the character "Mr. Money" was too childish for older students. "Mr. Money" was used to introduce all tape presentations and to maintain the student's attention. With the older students usually found in TMR classes, this type of attention-getter was not considered to be appropriate. It was also felt that the activity of buying candy to emphasize change making in Book Four was not appropriate for older students.

When asked about the need for individualizing instruction, about half of the teachers felt it would be helpful to have supplementary materials that could be used on an individual basis. It was noted that the Unit need not be completely revamped to individualize instruction, but a few teachers commented that some individual instruction could enhance group instruction.

Discussion

The Money Unit of the Money, Measurement and Time Program has proven to be effective and useful with TMR students. Although the present form of the Unit was developed for EMR students, the results indicated that the instruction increased the TMR students' knowledge of both money vocabulary and money skills. The effectiveness and useability of the Unit were supported by the pretest to posttest gains and the comments made on the teacher evaluation forms.

The pretest to posttest gains on both the Money Skills and Money Expressive Tests documented the effectiveness of the instruction for TMR students. Although pretest scores indicated that the TMR students were better able to handle the Expressive Test items, the performance gains on both tests were found to be significant. The percentage of students performing correctly on individual items also demonstrated the effectiveness of the instruction. On all items, except two, the percentage of TMR students responding correctly showed a significant increase

from pretest to posttest.

The useability of the Money Unit was verified and its effectiveness further supported as a result of the feedback from the teacher evaluation forms. The teachers reacted very favorably to the Money Unit and said they would use it again rather than another instructional package on money. In general, the teachers felt the Unit was not only effective, useful, and enjoyable for TMR students, but also satisfying for them to teach.

A comparison of the TMR performances on the Money Tests with those of EMR students (Krus, Thurlow, Turnure & Taylor, 1974) also provided interesting information relevant to the assessment of the effectiveness of the Money Unit for TMR students. The average MA of 5.4 years and the average IQ of 42.4 of the TMR's were significantly lower than the average MA (6.2 years) and IQ (71.9) of the students involved in the EMR field-test of the Money Unit (Krus, Thurlow, Turnure & Taylor, 1974), for whom the materials were originally developed.

There was one item that was quite difficult for both the EMR students and the TMR students. The item "selects pictures of money" required the students to pick out the money from a picture of various coins, bills and distractors. The difficulty appeared to be inherent in the test item itself, rather than in the students' ability or the instruction. Both the EMR and TMR teachers noted that this item was poor because the pictures of the money were inferior to the other test pictures.

Although the EMR and TMR populations received the instruction in the Money Unit for approximately the same period of time, it is difficult to evaluate the relative effectiveness of the unit for the two populations. The EMR students were generally able to progress through the instruction more rapidly than were the TMRs and thus were able to receive appropriate instruction related to more of the objectives tested. Even on those items from Books One and Two, where both EMRs and TMRs had received the instruction, the TMRs did not perform as well as the EMRs. On the Money Skills and Money Expressive Tests, the EMR students gained 2.85 and 2.94 points respectively, from pretest to posttest.* However, the gains made by the TMR students were not as large. From pretest to posttest the TMR students gained .72 points on the Money Skills Test and 1.17 points on the Money Expressive Test.**

Recommendations for Revisions

Revision recommendations made by the TMR teachers covered two basic areas: (a) the general format of the materials, and (b) the suitability of the materials for TMR students.

Suggestions for revisions in the general format dealt with the Teacher's Editions, the student texts and the assessment devices. Actually, no problems were noted with respect to the format of the Teacher's Editions. The Teacher's Editions had been extensively

*EMR pretest means: Skills = 2.94, Expressive = 4.15
EMR posttest means: Skills = 5.79, Expressive = 7.09
**TMR pretest means: Skills = 2.25, Expressive = 4.23
TMR posttest means: Skills = 2.97, Expressive = 5.40

revised during the pilot-test of the Money Unit, so that no revisions had been expected. During the formative evaluation, however, it had been suggested that it might be easier for teachers to follow the tape presentation and manipulate the picture books at the same time if the Teacher's Editions contained only summaries of each tape presentation rather than the complete scripts. The following question was included on the evaluation forms and used to obtain the teachers' opinions on this issue. (The numbers indicate the mean percentage of teachers selecting each option.)

> What do you think would be the most effective and useful way to inform teachers of the content of the tape presentations?
>
> 91% Complete script (i.e., as is)
> 9% Summary of script
> 0% No script at all

All of the teachers, except one, selected the first choice, thus suggesting that no revisions to this aspect of the Teacher's Editions need be made.

There were several recommendations that dealt with the student texts. As mentioned earlier, there were two types of student texts the "Big Picture Book" and the individual "Children's Books." Teachers reported that both the big books and the individual books should be made of sturdier materials, and that the individual books should have tabbed pages for easier accessibility to each lesson. Also, most of the teachers noted that more realistic pictures of money and colored pictures should be used. With the knowledge that many standardized tests and math texts do not use photographs of coins,

or even colored representations, the Vocabulary Development Project suggests that both photographs and artists' representations be used in the instruction. The photographs would be used initially to insure correct identification and then the students would be introduced to artists' representations and shown features which would help them identify the particular coin o. bill being represented.

Teachers also commented on improving the test pictures. They suggested using colored pictures, improving the clarity of some pictures and using real coins whenever possible. One teacher also indicated that it would be better if the test questions and prompts could be individualized. The suggestions concerning the test pictures can readily be taken into consideration, and revisions can easily be made. The test questions and prompts have undergone extensive development and evaluation, and thus latitude to expand them should be minimal. In the revised testing manual (which resulted from the EMR field-test) suggestions are made that the teacher may adapt prompts, but must be careful in doing so. Inappropriate test questions and prompts have been deleted, and the revised test should result in maximal performance by the students without allowing for the introduction of prompts which would create an unreliable and invalid test.

On the evaluation forms, teachers further indicated that they would like book and lesson tests included in the instruction. The Vocabulary Development Project would recommend that such tests be developed and introduced within the sequence of the instruction

in order to measure the student's progress. These would be included at relevant points throughout the instruction (i.e., after every few lessons) and would allow the teacher to assess the students' progress and to identify weak spots in the mastery of objectives.

The suitability of the Money Unit for TMR students was one of the major concerns of the Vocabulary Development Project. Several recommendations for making the materials more appropriate for TMR students were made by the teachers participating in the TMR field-test.

Over half of the teachers indicated that the Unit was complete in its present form. One teacher reported the need for more activities for TMR students. This teacher noted that it was necessary to repeat the activities many times until the students had mastered the concepts. The Vocabulary Development Project believes the need for additional practice by TMR students is valid, and suggests that such practice should continue to be in the form of "modified repetition" (Shif, 1969). In this way, the child would receive the information from several points of view, rather than being restricted by rote repetition. A revision of the unit should thus attempt to include more activities, in addition to suggesting ways to modify the present activities or to stimulate the teachers to create new activities.

Also recommended was the exclusion of "Mr. Money" in the tape presentations. Many of the TMR students participating in this study were older than the experimental EMR students, and "Mr. Money" was

considered by the teachers as being too childish for them. A possible revision is simply to have a narrator on the tape and exclude the label "Mr. Money." Also mentioned by some teachers was that a few of the buying activities in Book Four were inappropriate for the older students. One solution to this would be to include a suggestion to teachers to use their own discretion in choosing items that would be more appropriate for the age group of students being taught.

The last recommendation concerned with making the materials more suitable for TMR students dealt with individualizing the instruction. Some teachers commented that individual instruction could be an important and helpful addition to the Unit. Because of the student's varied abilities and different rates of progress, the Vocabulary Development Project would recommend the inclusion of materials for individual work, especially in the additional activities suggested for TMR students.

The Money Unit of the Money, Measurement and Time Program has been shown to be effective and useful not only with EMR students but also for TMR students. Like the EMR data, the gains made from the pretest to posttest and the favorable reaction to the unit by the teachers emphasizes the success of the Money Unit for the TMR population. Only minor revisions are needed to make the Program more appropriate for trainable mentally retarded students.

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Footnotes

This report is based on the first author's masters thesis, conducted under the direction of Robert H. Bruininks and the project directors of the Vocabulary Development Project. The first author is currently a teacher of TMR students in Monticello, Minnesota.

The TMR field-test could not have succeeded without the help and cooperation of many individuals. Appreciation is extended to all Directors of Special Education who formed the link between the Project and the field-test teachers. Also, special thanks are due to all the teachers who consented to test and teach the materials, and to comply with all the requests made of them.

The authors also wish to thank Roseshel Howe who critically read this manuscript.

Appendix 1

Teacher Evaluation Form

Unit Evaluation

1. Where did you start teaching in the Money Unit? Book_____ Lesson_____

2. Where did you stop teaching in the Money Unit? Book_____ Lesson_____

3. Please indicate:
   a. The average preparation time for each teaching period: _____ minutes
   b. The average length of each teaching period: _____ minutes
   c. The average number of teaching periods per five day week: _____

4. Please indicate the percentage of time in which instruction was given to:

   Whole class_____%
   Small groups_____%
   Individuals_____%

---

1. How did you feel about using the Money Unit?
   _____ I enjoyed it very much
   _____ I thought it was alright
   _____ I would rather use something else next time

2. Have you used any other commercial materials or math texts to teach money concepts? _____ YES _____ NO
   If YES, what did you use?

   a. If given a choice of materials to use to teach money:
      _____ I would prefer to use this Money Unit rather than others
      _____ I would use either this Money Unit or other money materials; wouldn't matter
      _____ I would prefer to supplement this Money Unit with other materials
      _____ I would prefer to use other materials all together

   b. Compared to other commercial materials, was the Money Unit
      More useable? _____ YES _____ NO
      More effective? _____ YES _____ NO
      More enjoyable? _____ YES _____ NO

3. Did you get tired of teaching with these materials?
   _____ Yes, the repetiveness was boring
   _____ Sometimes, but the repetiveness is necessary to teach my students
   _____ No, these materials offer more diversity than most

4. How important do you think the concepts covered in the Money Unit are to the children in the long run?

_____ All concepts are essential
_____ Most concepts are necessary
_____ Concepts are good, but not necessary
_____ Most concepts are not needed

5. Do you think the children will remember the more important money concepts a year from now? _____ YES _____ NO

6. How effective were the materials:

_____ Very effective
_____ Effective
_____ Could have been more effective
_____ Not very effective at all

7. How interested were the children in the Money instruction?

_____ More interested than usual
_____ About as interested as in other instruction
_____ Not very interested

Please rate the following aspects of the Money Unit in terms of their appropriateness (or, completeness), for you as the teacher. Rate each item from 1 to 5, with 1 being the least appropriate (or, complete) and 5 being the most appropriate (or, complete).

	Appropriateness	Completeness
a. Inservice training		
b. Teacher's Editions, in general		
c. Introductory pages to Teacher's Editions		
d. Directions to teacher in lessons		
e. Pre-activities		
f. Lesson Organizers		
g. Scripts accompanying tape presentations		
h. Post-activities		
i. Worksheets		
j. Transparencies		

Please rate the following aspects of the Money Unit in terms of their effectiveness, enjoyability, interest, and attention-focusing ability, for the children in your classroom. Rate each item from 1 to 5, with 1 being the least effective (enjoyable, interesting, or attention-focusing) and 5 being the most effective (enjoyable, interesting, or attention-focusing).

	Effectiveness	Enjoyability	Interest	Attention-focusing
a. Introductory lesson (for preparation)				
b. Mr. Money				
c. Pre-activities				
d. Tape recordings				
e. Worksheets				
f. Transparencies				
g. Art work in books, worksheets, etc.				
h. Post-activities for review				
i. Post-activities to expand concepts				
j. Post-activities to build skills				

1. Did you have any problems with the pre-testing and/or post-testing of the unit? _____ YES _____ NO
   If YES, what were the problems?

2. Where did the pre-test results suggest that you start teaching the Money Unit? Book_____Lesson_____

3. Did you agree with the recommended starting point? _____ YES _____ NO

4. Did you teach all the lessons between the points at which you started and stopped instruction? _____ YES _____ NO
   If NO, what did you skip?

5. At what mental age would you recommend that children could start in the Money Unit? _____

6. Are there any children for whom you feel the Money Unit is not appropriate?

7. How long do you think it would take your children to complete the entire Money Unit?

8. How long do you think it would take your children to cover the same content as presented in the Money Unit, without the use of the program?

9. Which of the following teacher-administered assessment devices would you like to see added to the Teacher's Editions to evaluate the children's progress?

_____ Lesson tests
_____ Book tests
_____ Unit tests
_____ None

---

1. Look at the sequence of the entire Money Unit. Is there any way you would change the sequence? _____ YES _____ NO
If YES, how?

2. How do you feel about the completeness of the Money Unit?

_____ Needs more instruction at the beginning
_____ Needs more instruction at the end
_____ Unit is complete as it is

Frequently, when a new program of instruction is introduced into a classroom, other individuals see and react to the materials. Please rate the reactions of any of the following individuals to the Money materials, on a scale of 1 to 5 (1 = negative reaction; 5 = positive reaction).

_____ Principal
_____ Parents
_____ Regular classroom teachers
_____ Aides
_____ Others

Please indicate:

a. Number of years of teaching experience (include all teaching except student teaching) _____
b. Number of years teaching educationally handicapped children _____
c. Are you certified in special education? _____ YES _____ NO

If you have the time and the inclination, are there any suggestions about the testing or the materials you would like to share with us?

Is there anything else you would like to tell us?

And, a FEW more general questions . . . . .

These questions have "popped up as a result of some comments we have received. Please let us know how you feel.

Do you think the Money, Measurement and Time Program should be modified into a program of individualized instruction?

---

1. Did you like using the Big Picture Book? _____ Please note any suggestions you have for making the Big Picture Book more useable and/or more effective.

2. Did you like the children to have their own texts? _____ Please note any suggestions you have for making the Children's Picture Books more useable and/or more effective.

3. How do you think the student texts should be supplied to the classroom?
   - _____ Only in the form of Big Picture Books
   - _____ Only in the form of individual Children's Picture Books.
   - _____ In both forms, with both being used during the same tape presentation
   - _____ In both forms, with the teacher selecting the form to be used during a given tape presentation
   - _____ In one form for certain books and the other form for other books (i.e., as it is now)

4. What do you think would be the most effective and useful way to inform the teacher of the content of the tape presentations?
   - _____ Complete script (i.e., as is)
   - _____ Summary of script
   - _____ No script at all

Please describe the room arrangement you used during the tape presentations (e.g., children on floor around tape player, children at desks with tape player in front of room, etc.). Draw a diagram if this will clarify your response.

Is there any other room arrangement you think would be best for optimizing the effectiveness of the tape presentations?

What do you feel would be the best way to introduce a unit in the Money, Measurement and Time Program to a teacher planning to use it in the classroom?

_____ Inservice training session
_____ Written document describing unit flow, books, etc.
_____ Both inservice training and written document

The Teacher's Introduction to the Money, Measurement and Time Program was designed to familiarize the teacher with the total program. Please briefly describe your reactions to the Teacher's Introduction and any recommendations you have for improving it.

Appendix 2

Teacher Evaluations of the Money Unit

A. Teacher Characteristics

1. Number of years of teaching experience (student teaching excluded):
   $\bar{X}$ = 4.18 years
   SD = 3.74
   Range: 1-14

2. Number of years teaching educationally handicapped children:
   $\bar{X}$ = 3.04 years
   SD = 2.08
   Range: 1-7

3. Nine out of eleven teachers are certified in special education.

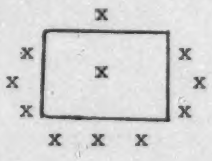
B. Teaching Characteristics

1. Average preparation time for each teaching period:
   $\bar{X}$ = 17.8 minutes
   SD = 12.0
   Range: 5-40 minutes

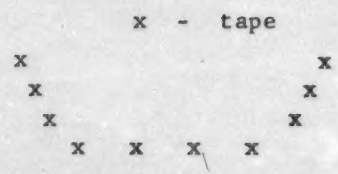
2. Average length of each teaching period:
   $\bar{X}$ = 25.5 minutes
   SD = 8.96
   Range: 15-45 minutes

3. Average number of teaching periods per five day week:
   $\bar{X}$ = 5.89
   SD = 6.11
   Range: 3-22

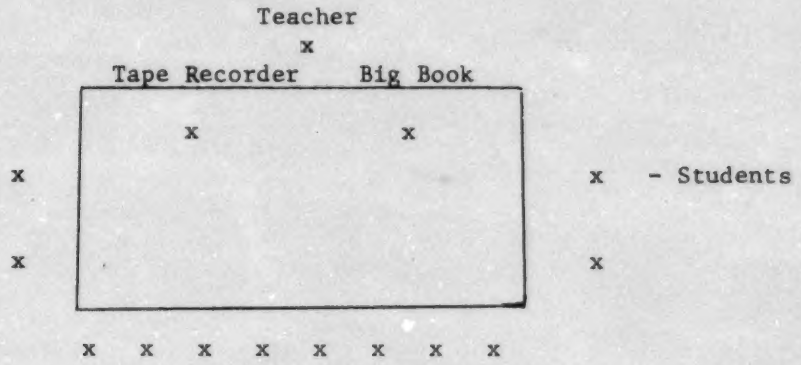
4. Room arrangements
   a. "Teacher at desk, the people congregated around the desk on chairs."



   b.



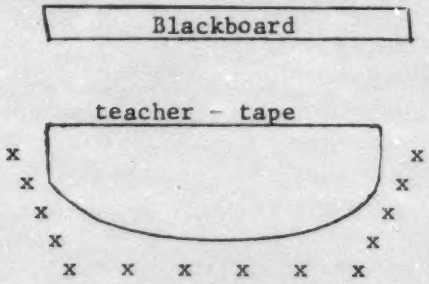
c. One teacher found that using tables was helpful for books and worksheets.



d. "Kidney" shaped table with tape player in teachers lap - out of sight of students.

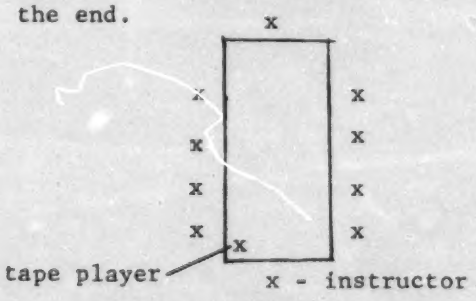
e. "We sat around a small table facing a blackboard. We were able to look at the real money on the table and the pictures on the blackboard. We placed the tape recorder on the table."

f. "Children around table with tape and books in front. Blackboard in front too."

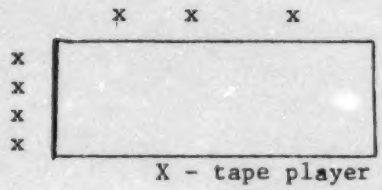


g. "The children were arranged on the floor around me and the player."

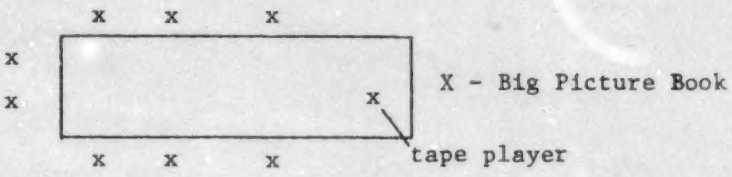
h. Students were seated around a long, rectangular table and teacher was at one end with the tape player at the end.



i.



j. Children at table



k. Children on floor around tape player or children at desks with opaque projector in front.

NOTE: Two teachers noted that kidney on round shaped tables would be more appropriate for presentation of the instruction. One teacher suggested using ear phones.

C. General Reactions to the Money Unit

1. Item: "How did you feel about using the Money Unit?"

91%	"I enjoyed it very much."
9%	"I thought it was all right."
0%	"I would rather use something else next time."

2. Item: "Did you get tired of teaching with these materials?"

0%	"Yes, the repetiveness was boring."
18%	"Sometimes, but the repetiveness is necessary to teach my students."
82%	"No, these materials offer more diversity than most."

NOTE: One teacher said she had to repeat much more than there were activities.

3. Item: "How important do you think the concepts covered in the Money Unit are to the children in the long run?"

30%	"All concepts are essential."
70%	"Most concepts are necessary."
0%	"Concepts are good, but not necessary".
0%	"Most concepts are not needed."

NOTE: One teacher said the concepts are too difficult for her children.

4. Item: "Do you think the children will remember the more important concepts a year from now?"

70% Yes 30% No

NOTE: One teacher said not unless continuously reviewed.

5. Item: "How effective were the materials?"

20%	"Very effective"
80%	"Effective"
0%	"Could have been more effective"
0%	"Not very effective at all."

NOTE: One teacher couldn't be sure until post-testing was completed.

6. Item: "How interested were the children in the Money instruction?"

82%	"More interested than usual."
18%	"About as interested as in other instruction."
0%	"Not very interested."

NOTE: One teacher noted her children especially enjoyed the tape presentation.

D. Answers to Specific Questions

1. When asked to name other materials the teachers had used to teach money, the following were noted: (responses)

Money Trainer developed by Larry Holmquist
(2 teachers noted this)
Harcourt Brace
Three teachers noted they used other materials but did not name them.
Five teachers responded they had not used other materials.

If given choice of materials to teach the Money Unit, the following reactions were given: (9 responses)

56%	I would prefer to use this Money Unit rather than others.
0%	I would use either this Money Unit or other money materials; wouldn't matter.
44%	I would prefer to supplement this Money Unit with other materials
0%	I would prefer to use other materials all together

NOTE: One teacher preferred to use real money and build around it.

2. Item: "At what mental age would you recommend that children could start in the Money Unit?"

   (9 responses) $\bar{X} = 4.8$
   SD = 0.9
   Range: 4.0 - 6.5

3. Item: "Look at the sequence of the entire Money Unit. Is there any way you would change the sequence?"

   20% Yes 80% No

   NOTE: One teacher said she would introduce "cash, cash register and cashier" before store activities are begun. Another wanted more recognition - too rote at beginning.

4. Item: "How do you feel about the completeness of the Money Unit?"

   27% "Needs more instruction at the beginning."
   18% "Needs more instruction at the end."
   54% "Unit is complete as it is."

   NOTE: One teacher said unit is complete but may not be suitable for TMR's.

5. When asked to rate the reactions of other individuals to the Money materials, the following were given: (Rating is on a scale of 1 to 5 from most negative reaction to most positive.)

   4.0 Prinicpal (N = 5)
   4.4 Parents (N = 5)
   4.6 Regular classroom teachers (N = 7)
   4.6 Aides (N = 8)
   4.8 Others (N = 4)

6. Item: "Which of the following teacher administered devices would you like to see added to the Teachers Editions to evaluate the children's progress?"

   30% Lesson tests
   10% Book tests
   30% Unit tests
   30% None

   NOTE: One teacher made up a list of objectives and then tested students to see if they achieved them. Noted this was useful.

7. " Are there any students for whom you feel the Money Unit is not appropriate?"

   Responses:

   "I feel that the concepts presented would be appropriate for mentally handicapped adults and older teenagers, but then the approach (Mr. Money, buying candy, etc.) would not be appropriate."
   "No, money concepts are important"
   "Autistic, hyperactive"
   "Lower functioning TMR's"
   "Two teachers simply said "Yes" and one said "No".

8. (a) "How long do you think it would take your children to complete the entire Money Unit?" (b) "How long do you think it would take your children to cover the same content as presented in the Money unit, without use of the program ?"

(a)	(b)
"Have not completed unit"	"I don't know."
2 years to do it justice	3 years
"I'm afraid the students I have been working with could never complete it."	much longer
a year	year
6 months to a year	at least twice as long
2 or 3 years	same time
"The counting and change units can take a long time and then some of my students still wouldn't master it. A minimum for my TMR students would be 6 months at 20 minutes a day."	I can't see any difference.
3-4 semesters	same, but more drill
2 school years - If the materials could be adapted to fit the needs of older students. One was 48 years and approach seemed inappropriate.	"The program would cover the content in a shorter period of time (6 months) but would tend to skip or slight pre-activities and post activities which I feel are very important, if knowledge is to be retained."

E. Teacher Reactions to Specific Aspects of Money Unit (mean rating on scale of 1 to 5, from negative to positive; the number in parentheses is the n)

	Appropriateness	Completeness	Average
1. In-service training	3.6 (7)	3.5 (6)	3.8 (8)
2. Teacher's Edition, general	4.1 (9)	4.0 (9)	4.1 (10)
3. Introductory Pages	4.1 (10)	4.2 (10)	4.2 (11)
4. Directions to teacher in lesson	4.6 (10)	4.9 (10)	4.2 (11)
5. Pre-Activities	4.3 (10)	4.2 (10)	4.2 (11)
6. Lesson Organizers	4.3 (10)	4.3 (10)	4.4 (11)
7. Scripts for tapes	3.8 (9)	4.3 (10)	5.0 (10)
8. Post-Activities	4.9 (10)	4.6 (10)	4.8 (11)
9. Worksheets	3.5 (11)	3.8 (9)	3.6 (11)
10. Transparencies	4.0 (11)	4.1 (9)	4.1 (11)

F. Children Reactions to Specific Aspects of Money Unit (mean rating by teacher on scale of 1 to 5, from negative to positive; (the number in parentheses is the n)

	Effectiveness	Enjoyability	Interest	Attention Focusing	Average
1. Introductory Lesson	3.7 (9)	3.8 (9)	3.7 (9)	3.8 (9)	3.6 (7)
2. Mr. Money	4.2 (10)	4.3 (10)	4.5 (10)	4.4 (10)	4.3 (9)
3. Pre-Activities	3.9 (9)	3.4 (9)	4.0 (9)	4.0 (10)	4.1 (9)
4. Tapes	3.6 (10)	3.9 (9)	4.4 (10)	4.2 (10)	4.2 (10)
5. Worksheets	3.2 (11)	3.4 (10)	3.3 (10)	3.4 (10)	3.6 (10)
6. Transparencies	3.5 (10)	3.5 (10)	3.5 (10)	3.7 (11)	3.6 (10)
7. Art Work	3.3 (11)	3.4 (10)	3.3 (10)	3.6 (10)	3.3 (10)
8. Post Acts: Review	4.1 (10)	4.3 (9)	4.2 (9)	4.1 (9)	4.1 (9)
9. Post Acts: Expand	4.0 (9)	4.1 (8)	4.1 (8)	4.0 (8)	4.0 (8)
10. Post Acts: Skills	4.3 (9)	4.4 (8)	4.4 (8)	4.3 (8)	4.2 (8)

NOTE: One teacher said for items 8-10, she would have to rate them individually for each activity. She said she would rate them between 3 and 5.

G. Specific Questions about Materials

1. Item: "Did you like using the Big Picture Book?"

Responses:

1. "Yes, and No. I felt the pictures were a real aid in attention focusing, but the book was very hard to manipulate. I think making the pictures on tagboard or other stiff material would make it much less cumbersome."
2. "No, make all student workbooks and make them hard cover."
3. "Would need to be more colorful, come with its own stand and could be a bit bigger."
4. "Yes, but make it easier to show, such as being on as easel!"
5. "More stable material to be used."
6. "No, the kids are more attentive and can see better when each has own text."
7. Three teachers just said "Yes" and one said "No".

2. Item: "Did you like the children to have their own texts?"

Responses:

1. "Yes, I used the big picture book - separated and placed it on the blackboard where everyone was close to it and could see it. I used magnets to hold up the separte sheets."
2. "Yes, also, would like them more colorful. I also would have liked an easy system for having the students find the correct page. The different colored pages were helpful. How about colored tabs?"
3. "Yes, I think that in pictures where actual coins were represented, that if they would have been their characteristic color that they would have been more effective. Some of my students have trouble discriminating even between actual coins and the pictures were very confusing to these students."

3. Item: "How do you think the student texts should be supplied to the classroom?"

0%	"Only in the form of Big Picture Books."
0%	"Only in the form of individual Children's Picture Books."
27%	"In both forms, with both being used during the same tape presentation."
55%	"In both forms, with the teacher selecting the form to be used during a given tape presentation."
18%	"In one form for certain books and the other form for other books (i.e., as it is now)"

4. Item: "What do you think would be the most effective and useful way to inform the teacher of the content of the tape presentation?"

91%	Complete script (i.e., as is)
9%	Summary of script
0%	No script at all

5. Item: "Do you think the Money, Measurement and Time Program should be modified into a program of individualized instruction?"

Responses:

1. "Yes, I feel it would be helpful in many cases as my students were all at different levels of abilities and understanding. I don't feel it need be completely individualized (not tape presentations, workbook activities) but others would be beneficial."
2. "Yes, there were some students, at this level who do not function well in groups, but can achieve much when working on a 1 to 1 ratio."
3. "I think it can easily be adapted as is."
4. "I think it would be a good supplement to the group activity because many people have been progressing at different rates. I don't know if the individual program would be practical with our student-teacher ratio."
5. "Yes for some, no for other advanced students."
6. "I sort of like to have some materials I can use as the basis for large and small group work. However, the material content may be more effective if modified into a program of individualized instruction."
7. "We do not have the teacher-student ratio to implement such a program. Possibly parents of home students could. But most of our students are institutionalized."

6. Item: "What do you feel would be the best way to introduce a unit in the Money, Measurement and Time Program to a teacher planning to use it in the classroom?"

25%	In-service training
17%	Written document describing unit flow, books, etc.
0%	Both in-service training and written document

NOTE: One teacher responded to two items.

H. Teacher Comments (one not specifically elicited by questionnaire)

1. "I didn't feel the posttest results of my students were a true measure of what they had actually learned. Most I feel actually would have scored better had I been able to individualize prompts and wording of questions."
2. The Teacher's Introduction was very organized and well outlined.
3. "All the penny's should be brown. Test pictures should be replaced by real money or objects where appropriate (supplied by tester) I would like to continue the program next year with a younger group and also continue with this group."
4. "I liked the Teacher's Introduction. I had my student-teachers read it and they thought it was good."
5. "My reaction to the Teacher's Introduction is good. I wish I had it to look at now. But I remember that it was complete and I was able to understand it and know what to expect."
6. "I think it (Teacher's Introduction) was a vague introduction, and it left many unanswered questions about specific questions that might arise. Generally, these questions about specific procedures were cleared up when I got into the unit. The program is very good. The testing is very difficult with some of the pictures in that they are not clear. As I started the program recently, I am convinced of the short term benefits but I am not as convinced of the long term retention."
7. "Improve some of the pictures in the test booklet."
8. "I liked the program, but feel that 10 years trainable is too young. I think 12 years trainable hence, would be much better for the type we have. Is it possible to have the pictures with the money in color? I think this would be good if it isn't impossible costwise. The children liked Mr. Money."
9. One teacher felt the Teacher's Introduction was "O.K. and well written."
10. "I enjoyed it as well as the class. They looked forward to it.
11. "Needs more time to cover books, moves fast, more rote work."
12. "I would like to see a re-examination of the pretest. I was satisfied with the Teacher's Introduction".
13. "Very frequently the students would not respond to the pictures of coins and bills. The tests may have been better with more realistic coins. Teacher's Introduction was very complete and informative."

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